

I have saved all the observations I have made, and the work of them, which I should have sent you a complete copy of, if I had been well enough to have transcribed them.

I am,

Yours, &c.

John Horsley.

“ Mr, Horsley, whose skill and diligence are better evinced by his own account than by any encomiums I can give them, made use of a quadrant made by Mr. Bird, and my British Mariner’s Guide, for determining the longitude of the ship at sea.

N. Maskelyne.

LV. *An Account of a remarkable Meteor seen at Oxford, April 23, 1764. In a Letter to the Rev. Thomas Birch, D. D. Secretary to the Royal Society, from the Rev. John Swinton, B. D. F. R. S. Member of the Academy degli Apatisti at Florence, and of the Etruscan Academy of Cortona in Tuscany.*

Good Sir ;

Read Dec. 13, 1764. **H**AVING taken a turn on the Parks, or Public University-walk here, on Monday April 23, 1764, towards the decline of the afternoon ; I made a visit to a friend in town, with whom



whom I have now and then an article of business to transact. Upon my return home, about 8^h 10' P. M. looking over the houses opposite to Alban-Hall; I observed a very remarkable kind of light, forming the representation of an exceeding bright crepusculum, or expanded body of vapour, which diffused itself over all the northern part of the hemisphere that presented itself to my view. This I looked upon as a prelude to an *Aurora Borealis*, in some form or other. But as such appearances are pretty common here, especially of late years, I then paid no great attention to it. About 8^h 55', not thinking of what I had seen, I threw up my sash, and accidentally cast my eye towards the N. W. where, to my very great surprise, I discovered a luminous arch, [TAB. XIX.] extending itself to the opposite part of the heavens, somewhat resembling an *Iris*, but of a bright white colour. I then went out into the street, traversed part of the town, and found the arch both in the N. W. and S. E. to be nearly terminated by the horizon; so that it seemed to be almost perfectly semicircular, and consequently in a manner to bisect the hemisphere, when completely formed. The meteor was not exactly erect, but ascended obliquely, declining a little to the N. of the zenith. It was extremely narrow, in breadth scarce exceeding two degrees. Its edges towards the S. E. were not so well defined, but somewhat jagged and unequal. From 9^h to 9^h 15' it exhibited a most vivid resplendent whiteness, such as, I believe, was hardly ever observed before. During that term, the phenomenon seemed altogether fixed and permanent, without increase or diminution, without any apparent motion
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of the whole, and indeed almost without the least external variation. An internal undulating motion of the particles constituting the white luminous matter of the arch was nevertheless discernible, from the first to the last moment of it's existence. No stars were visible through the vapour itself, but two or three appeared at a small distance from it. These, however, were much obscured by the interposition of some thin whitish clouds, with which that part of the atmosphere was at this time covered. Not the faintest traces of a proper *Aurora Borealis*, either before the first appearance, during the continuance, or after the extinction of the meteor, were to be seen. Several young people were viewing it, when I went into the street; who seemed, according to custom, not a little alarmed at so unusual a sight. One of them told me, that the arch began to be formed about a quarter before nine. In other parts of the city this wonderful phænomenon was likewise observed, both by townsmen and members of the University, not without some degree of astonishment and surprize. A little past nine o'clock the extremities of the arch grew faint, as did soon after the whole body of the luminous vapour itself. About 9^h 20' the summit, or highest part, of the arch, a few degrees to the N. of the zenith, only remained; which continued gradually decreasing 'till 9^h 27', when the whole totally disappeared.

With regard to the weather, the morning of the 23d was dark and lowring; but the remainder of the day, from 10^h 45' A. M. to sun-set, was bright and clear, though cold out of the sun. The wind 'till six P. M. was northerly, and blew pretty fresh,
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but then came about to the N. W. From that time to 8^h 15' P. M. it gradually decreased, and was succeeded by almost a perfect calm, the least breath of air being then scarce perceptible. During the continuance of the meteor, this calm remained; and after the extinction of it, the weather was considerably milder than before. The 24th was a warmer day than any we had had since the month commenced, the sun irradiating us from morning 'till evening with his salutary rays. The whole hemisphere and the horizon this evening were clear and serene, the firmament being but slightly interspersed with thin whitish clouds. That part of it near the horizon was tinged with a most beautiful red colour. The sun, just before he emerged out of our hemisphere, perfectly resembled a globe of fire.

I have not yet been able to meet with an instance of a similar phænomenon in any physiological papers, published before the year 1750. But accounts of two or three meteors somewhat resembling that above described, in our *Philosophical Transactions* *, then occurred. However, that of the 23d of April, 1764, differed from one of these in it's extent, as well as the inconsiderable breadth of the zone forming the arch, and the bisection of the hemisphere. From the others it was sufficiently distinguished by it's most vivid resplendent whiteness, without any short, white, vibrating columns attached to it; especially, as it was neither preceded, attended, nor followed by any streaming luminous rays, or coruscations. I cannot help therefore considering this as a singular

* *Philosoph. Transact.* Vol. XLVI, p. 345, 346, 347, 648, 649.

fort of phænomenon, never hitherto honoured with an adequate description. If it should appear to the Royal Society in the same light, they will excuse the trouble given on this occasion by,

S I R,

Your much obliged,

and most obedient,

humble servant,

Christ-Church, Oxon.

Aug. 29, 1764.

John Swinton.

LVI. Some Remarks upon the Equation of Time, and the true Manner of computing it. By Nevil Maskelyne, A. M. Fellow of Trinity College, Cambridge, and F. R. S.

Read Dec. 13, 1764. **T**HESE remarks were wrote above a twelve-month ago, and would have been then communicated to the Royal Society, had not my voyage to Barbados prevented it. Since my return from thence, I find part of the mistakes here pointed out acknowledged and corrected by M. Delalande, in his Treatise of Astronomy lately published, to whom I remember to have communicated my ideas on the subject, when he was in England. Nevertheless, as the error arising from taking